competent to judge of them, or to estimate their relative value and importance, unless he himself has a practical as well as a theoretical acquaintance with the subject.

One disadvantage in collecting Dragonflies is the difficulty of preserving the colours of most of the species. Hence the importance of carefully coloured illustrations taken from fresh specimens; and although Mr. Lucas's illustrations, which appear to be colour-printed, are not equal to Charpentier's beautiful plates of the same insects, they represent the insects very well, and the neuration of the wings is also accurately reproduced. Photography would, however, be the only way in which the neuration of many of these insects could be produced with absolute accuracy, especially in the case of *Neurothemis* and one or two other East Indian genera, in which the network is excessively fine, and must include thousands of divisions in each wing.

Mr. Lucas has divided his work into nine chapters—introduction, life-history, classification, the nymph, the imago, genera and species, reputed species, breeding the nymph, and preparing for the cabinet. The book concludes with addenda and corrigenda, list of works referred to, and a good general index. There are also detailed tables of genera and species, and even of the nymphs. The plain figures represent oviposition, eggs, nymphs, parasites, and various details of the insects.

In order to show the full manner in which Mr. Lucas has dealt with his subject, we will take one of the best known, though not one of the very commonest species, *Libellula quadrimaculata*, Linn., to which nearly twelve pages are devoted. First we have synonymy, then the original description (which we would gladly see inserted, as a matter of course, in all descriptive works, whenever possible, as it would save much misunderstanding and inaccuracy), size, description of the male imago, the female, immature colouring, variation, oviposition, egg, nymph, emergence of imago, date, habits, migration and distribution within the British Isles. It might be suggested that notes on extra-British distribution, and when desirable, notes on allied non-British species, would have made the account of each species more complete.

L. quadrimaculata is the most remarkable of the European Dragonflies for its migratory habits, and if memory serves us, it has sometimes been observed migrating in company with butterflies, though whether pursuing them as prey, or whether both species were urged by some common impulse, may be a matter for investigation. Most Dragonflies, except the slender-bodied and delicately-formed Agrionidæ, are very strong on the wing, and many even of those which are not migratory in their habits are often met with a long way from water. But there is no doubt that many Dragonflies are habitually migratory, which may partly account for the wide distribution of other species besides *L. quadrimaculata*, which latter, it may be noted, is found throughout temperate Asia and North America, as well as in Europe. In Christmas Island, near Java, where three wide-ranging species of Dragonflies are found (one of them being the almost cosmopolitan *Pantala flavescens*, already referred to), they are never seen except when the wind is blowing from a certain direction, when they appear suddenly in swarms.

A century ago we had no systematic works on British insects at all, except Lewin's admirable book on British Butterflies, published in 1795; for even Marsham's pioneer book on Coleoptera, and Haworth's on Lepidoptera, did not begin to appear till the beginning of the present century. At present we have more or less complete works on several orders and families of insects; but there are still many large groups, including the great order Diptera, and a large portion of the orders Hymenoptera, Neuroptera, and some families of Homoptera, of which we have no adequate up-to-date monographs at all, at least in a separate form.

We congratulate Mr. Lucas on his having so successfully filled up one of these remaining gaps in our British entomological literature.

As a specimen of Mr. Lucas's style, we may quote his account of the habits of one of the commonest of the larger British Dragonflies, *Æschna cyanea*, Müller:

"Though sometimes seen flying over the water, where it is difficult to catch, this insect is oftener met with along hedgerows and lanes, where it sometimes for a long time flies backwards and forwards over a very restricted range. On such occasions, notwithstanding its rapid, powerful flight, it is usually possible, with careful watching, to make a capture. When once startled, however, it usually soars away out of sight, to return very possibly, however, to the same spot a little later. On one occasion, in Berkshire, I noticed an *Æ. cyanea* hawking along a hedge in this way, and presently saw it capture a butterfly (probably the Small Copper). After circling round it several times the Dragonfly secured its prey, and began wildly careering round as if rejoiced at its success. While thus engaged, a wing of the butterfly—or part of one—was let fall, and *cyanea* settled in the hedge, where it appeared to be further stripping its captive. Shortly after, the Dragonfly was captured in its turn, when the body of the butterfly was found still between its jaws. But it is, of course, not at all an uncommon thing for one of the larger Dragonflies to capture a butterfly, whose wings it removes in a very workmanlike manner."

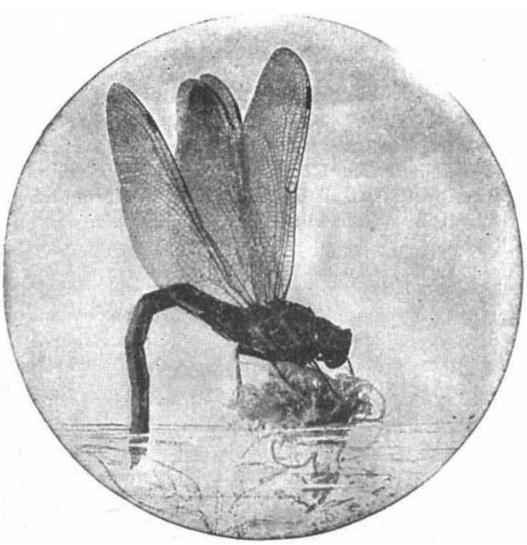

FIG. 1.—*Æschna grandis* ovipositing.

Apropos of the above passage, we may remark that a large North American Dragonfly (*Anax longies*, Hagen), belonging to the same family as *Æschna cyanea*, is described as habitually *decapitating* its prey, which generally consists of some of the larger butterflies. W. F. K.

NOTES.

THE desire has been widely expressed in University circles in Edinburgh that the Curators of Patronage, with whom the appointment to the chair of medicine rests, should offer the post to Prof. Osler, of the Johns Hopkins University, who is well known as a teacher and clinicist of the highest scientific eminence, and whose acceptance of it would greatly strengthen both the systematic and clinical teaching in the University. It would appear, however, that the Curators have no choice in the matter, but are bound to advertise every vacancy, so that the far more satisfactory and dignified method of appointment by invitation is necessarily excluded. Nevertheless, it is confidently hoped that Prof. Osler may be induced to send in a formal application for the chair, since it is certain that his claims would receive every consideration from the present Board of Curators, who have more than once, on recent occasions, shown that they are superior to merely local considerations, and that they have regard in making these appointments solely to the best interests of the University. Prof. Osler is a Canadian by birth, and although he has for many years successively occupied the important chairs of medicine in Philadelphia and Baltimore, he has, we believe, never renounced his British nationality. His appointment to Edinburgh, although it would be felt as a serious loss by our kinsfolk on the other side of the Atlantic, would doubtless be considered by them, and especially by our Canadian fellow-subjects, as a graceful recognition that we are one people bound together in science, as in politics, by common interests, and that we are prepared to welcome the best man from whichever side of the water he may hail. Applications for the post, with testimonials, must be lodged with Mr. R. Herbert Johnston, Secretary to the Curators, at 66 Frederick Street, Edinburgh, on or before April 14.

The Bakerian Lecture of the Royal Society will be delivered, on March 8, by Prof. Tilden, F.R.S., on "The Specific Heat of Metals, and the Relation of Specific Heat to Atomic Weight." The Croonian Lecture will be delivered, on March 22, by Prof. Paul Ehrlich, of Frankfurt-on-Main; the subject will be "Immunity, with especial reference to Cell Life."

Prof. Zittel, professor of palæontology and geology in the University of Munich, has been elected a correspondant of the Paris Academy of Sciences in the section of mineralogy. Prof. Pfeffer, professor of botany at Leipzig, has been elected a correspondant in the section of botany.

The *Electrician* states that the late Prof. D. E. Hughes has bequeathed to the Paris Academy of Sciences a sum of 4000*l.*, the income of which is to be used as a prize for the most important discovery in physical science, preference being given to a discovery in electricity or magnetism.

Prof. C. Piazzi Smyth, for forty-two years Astronomer Royal for Scotland, and professor of practical astronomy in the University of Edinburgh, died on February 21, at the age of eighty-one.

The committee of the Liverpool School of Tropical Diseases has decided to send out almost immediately another expedition to West Africa. The expedition will make its headquarters in Old Calabar, and carry on researches in Southern Nigeria.

The *Times* states that Mr. Charles Whitehead, who has acted as technical adviser to the Agricultural Department of the Privy Council, and subsequently to the Board of Agriculture, during the past fifteen years, has been compelled to resign that appointment owing to ill health.

Dr. C. L. Griesbach, the Director of the Geological Survey in India, has gone for a tour in the famine districts of the Central Provinces, Bombay and Rajputana, with a view to examining into the practicability of sinking artesian wells.

A Bacteriological Institute for Ceylon, erected from funds provided by Mr. J. W. Charles de Soysa, after the best European models, was officially opened at the end of January. The Director of the Institute will be Dr. Marcus Fernando, who has personally superintended its construction.

The Government of India have added to Mr. John Eliot's designation of "Meteorological Reporter to the Government of India" the words "and Director-General of Indian Observatories." The meteorological office has been removed to a house specially built for it. The address of the office will henceforth be—Alipore (Calcutta), Bengal, India.

The Sugar Beet Committee of the Central Chamber of Agriculture have decided to make arrangements for a series of not less than twenty experiments in the growth of sugar beet in different parts of Great Britain and Ireland during the forthcoming season, each experimental plot to be at least one acre in extent. As, in certain cases, previous experiments have demonstrated the value of sugar beet for the feeding of stock, independently of the value of the root for the manufacture of sugar, this point will be specially kept in view in connection with the proposed experiments of the present year.

Mr. A. A. Campbell Swinton will give a lecture upon "Steam Turbines, Land and Marine," at the Camera Club, on Thursday, March 8.

As the Royal Meteorological Society will attain its jubilee on Tuesday, April 3, having been founded on April 3, 1850, it is proposed to observe this fiftieth anniversary in a special manner. The Council have arranged for a commemoration meeting on that day, at which the President will deliver an address, and delegates from other societies will be received. In the evening a conversazione will be held at the Royal Institute of Painters in Water-Colours. On the following day, April 4, the Fellows will visit the Royal Observatory, Greenwich, and in the evening will dine together at the Westminster Palace Hotel. In view of this Jubilee Celebration, Mr. G. J. Symons, F.R.S., was elected President at the annual meeting of the Society on January 17, but owing to illness he has since been obliged to resign this office. In these circumstances the Council at their last meeting appointed Dr. C. Theodore Williams as the President of the Society.

The awards of prizes by the Reale Istituto Lombardo for the past year seem to indicate rather a lack of essays of real merit. The "ordinary" prize offered by the Institution for the best catalogue of remarkable meteorological phenomena prior to 1800 was unawarded, but premiums of 400 lire have been awarded to three of the competitors, and the judges consider that the publication of the results arrived at conjointly by the three would be of great value. Under the Cagnola foundation five prizes were offered, and none awarded, the only award being a premium of 1000 lire to the sole competitor who sent in an essay on illustrations of Hertz's phenomena. On two of the other subjects no essays were sent in, and on the other two the essays were not of sufficient merit to justify an award. The Pizzamiglio prize and the Ciani prize, for essays in political science, and the Zanetti prize, for discoveries in pharmaceutical chemistry, are all unawarded. The Fossati prize, for an essay illustrative of the macro- and micro-scopic anatomy of the central nervous system, has been conferred on Dr. Emilio Veratti. In striking contrast to the paucity of competitors in subjects of a more or less academical character is the keen competition for the Brambilla prize, given "to one who has invented or introduced into Lombardy some machine or some industrial process from which the population may derive a real and proved benefit." Seventeen competitors entered for this prize, the awards including a gold medal and 500 lire each to Bianchi and Dubini, for desiccators of silk-cocoons; to Aurelio Masera, for new processes connected with the textile industry; and to M. Rusconi, for developing the "Mercer" process in the cotton industry. In addition, gold medals and 400 lire are awarded to Carlo Carloni, for his invention of a mastic called magnesite, as a substitute for red lead for junctions of pipes, also for a bicycle brake; to Demetrio Prada and Co., for extracts used in tanning and for the manufacture of oxygenated water; and to J. Löffler, for introducing into Milan the manufacture of artificial flowers in porcelain. A gold medal and 300 lire is awarded to the Italian Colour Manufactory under Max Meyer and Co., and a bonus of 300 lire to E. Tuffanelli, of Milan, for an invention connected with water and gas pipes.

THE present position of chemical industry in Japan is referred to in the *Board of Trade Journal.* Near Osaka, the Yuso Kwaisha alkali works and the Nippon Yuso Kwaisha sulphuric acid plant are both in steady operation. It is stated that the Yuso Kwaisha plant was started in 1893 by English engineers, who fitted it up on the most approved principles, but is now entirely under Japanese management. At the works of the Nippon Yuso Kwaisha sulphuric acid is concentrated in Kioto porcelain vessels in terraced succession. Wakayama and Okayama pyrites, containing from 47 to 50 per cent. of sulphur, are used. The sulphuric acid, packed in earthenware carboys, has been exported in small quantities as far as Bombay. Iodine is also manufactured from seaweed, but in a very small way.

AMONG the new instruments brought out by Messrs. Isenthal, Potzler and Co., for use in connection with radiography and wireless telegraphy, is a mercury jet interrupter, which is one of the most perfect forms of break yet designed, and is more serviceable than Wehnelt's electrolytic interrupter. It consists essentially of a fine jet of mercury forming one contact piece, and a series of teeth cut in a cylindrical surface forming the other contact piece. The cylindrical surface surrounds the jet. Its axis is vertical, and the teeth taper downwards. Hence, when the cylinder is made to revolve, by means of a small motor to which it is connected, contact is made when the jet impinges upon a tooth, and broken when it comes upon an interspace. By raising or lowering the jet the ratio of contact to interruption may be varied from zero to infinity, and thus the mean current strength may be adjusted to any required value without interposing resistances. The number of interruptions may be varied through a wide range, and with twenty-four contacts and the motor geared up to three thousand revolutions, it reaches 72,000 per second, which suffices for practically every purpose.

THE magnetic qualities of building brick, to which so much attention has been directed of late by the work of Folgheraiter and others, have been tested quantitatively by Messrs. G. A. Gage and H. E. Lawrence, who, writing in the *Physical Review*, describe experiments, the original object of which appears to have been connected with the choice of bricks used in building physical laboratories so as to cause the least possible magnetic disturbance to the instruments. From the diagrams and tables it appears that certain bricks, described as "brown" and "pressed red," exhibited the most marked magnetic properties, and some of those described as white were among the least magnetic; and the authors infer that the effects are due to the presence of magnetic iron oxide either a constituent of the clay or formed by heat.

REFERENCE was recently made in NATURE to Signor G. Guglielmo's observations on certain modifications of hydrometers. In a still more recent number of the *Atti dei Lincei* (ix. 2), the same writer describes certain still different forms of total immersion hydrometers, in which the inclination of the instrument to the horizon determines the density of the liquid. The principle is, to all intents and purposes, the same as that of the bent lever balance commonly used for weighing letters. The hydrometer is an unsymmetrical body capable of turning about a horizontal axis at one extremity, and having its centres of gravity and buoyancy *not* in a straight line through this axis. On pouring any fluid into the vessel containing the hydrometer, the latter will rotate into a position in which the moments about the axis of support of the weight of the hydrometer and the upward reaction of the liquid balance each other, and as the position of equilibrium depends on the density of the liquid, the latter is determined by reading off the inclination of the instrument to the horizon. The object of this device is to obviate the disturbances due to capillarity which are inseparable from all forms of total-immersion hydrometers. Finally, by the use of a mirror method for reading the inclination (the effects of refraction being practically avoided by attaching the scale to the face of the containing vessel), great sensitiveness is obtained. It is easy to obtain hydrometers in which two or three degrees variation in temperature changes the deflection by 40°, but these are necessarily available only for a very limited range of density.

THE quarterly formerly entitled *Terrestrial Magnetism*, but which has now adopted the more comprehensive title of *Terrestrial Magnetism and Atmospheric Electricity*, bids fair to become a cosmopolitan medium of publication for papers bearing on this department of geophysics. In the last number (iv. 4) Profs. Elster and Geitel discuss, in a paper in German, the question of the existence of free electrical ions in the atmosphere, and the possibility of explaining the phenomena of atmospheric electricity by the properties of ionised air (see p. 422). This theory, while still open to objection, would appear to overcome some of the difficulties attaching to Exner's and Arrhenius's theories. In the same language, Dr. Lüdeling describes certain researches on the diurnal variation and on magnetic disturbances in polar regions. Dr. Lüdeling investigates graphically the phenomenon of the diurnal variation of the earth's magnetism for eleven stations with the aid of Von Bezold's vector diagrams. It would appear that when the magnetic disturbances are excluded, the direction of the curve is clockwise, but that the direction of the disturbance vector diagram is anti-clockwise; and Schuster's assumption, that the part of the diurnal variation freed from disturbance can be referred to an invariable revolving system, is not far from the truth. An article by the late General de Tillo deals with the relation between the magnetic elements and the distribution of land and sea, and the mean temperature of the earth's surface. The other papers include notes on the magnetic anomaly near Kursk, Russia, by G. W. Littlehales; on new magnetic intensity variometers, by A. Heydweiller; and a biographical sketch of Prof. Wild, illustrated by a portrait and view of the Constantine Observatory at Paulowsk.

A REPORT on the commercial value of the metric system, with special reference to the classification of German iron manufactures, was recently forwarded to the Wolverhampton Chamber of Commerce by the British Consul at Amsterdam, and is referred to in the *Board of Trade Journal.* The Consul states that the iron and steel manufacturers' unions of Germany have adopted a uniform system of dimensions for articles of universal consumption at home and abroad. Angle iron of all descriptions, flanged boiler ends or fronts for Cornish or Lancashire boilers, the boilers themselves, and iron and steel tubes and all fittings connected with them, such as valves, cocks, T pieces, are made, so far as flange, diameter, and working lengths are concerned, in normal standard sizes, in order that every part of one work may be procured at once to fit every corresponding part of another construction. These normal standards are all fixed by the free co-operation of the combined German engineers' associations, and are unanimously adopted by the various manufacturers all over Germany. At present a committee of the engineers' associations is occupied in endeavouring to fix a metric thread for bolts and screws, nuts, bolt-heads, &c., as the present universal normal standard (the Whitworth) is so differently constructed by different works that the parts are not as interchangeable as should be the case. These classifications are naturally making more and more progress in Germany, not in the iron trade alone, but in other manufactures. In view of these facts, the Consul points out that Germany and the Continent generally will have a constantly increasing advantage over British manufactures in the future in foreign countries, unless the metric system be fully and entirely adopted by Great Britain.

THE Danish Meteorological Institute has for the last few years been carrying on the useful work of collecting from all available sources particulars of the state of the polar ice. In the first place, observations were collected around Greenland only, but more recently it has been able to extend its observations so as to comprise the seas from Novaya Zemlya and Spitsbergen to Davis Strait and Baffin Bay. The results for 1899, accompanied by charts, have been published in the "Nautical Meteorological Yearbook" of the Institute for that year, and exhibit the following peculiarities:—(1) In the Kara Sea, the western part of Barents Sea, the South-east and part of North Spitsbergen, and also in Smith Sound and the immediately adjacent waters, there appears to have been more ice present than is usually the case. (2) South of Franz Joseph Land and on the east coast of Greenland, there has been considerably less ice present than usual. This latter condition gives promise of a good spring season off the south-west coast of Greenland. The great scientific and practical value of knowing, as far as possible, the annual distribution, character and quantity of drift ice of polar origin was unanimously recognised by the International Geographical Congress in Berlin last year, and the Danish Institute will gladly receive any observations upon the subject, to assist in compiling similar information for future years.

IN advance of the complete report of the Indian Plague Commission, a chapter has just been published devoted to Mr. Haffkine's method of anti-plague inoculations. Among the results of the Commissioners' critical study of the nature and effect of the anti-plague vaccine are the following:—(1) Inoculation sensibly diminishes the incidence of plague attacks on the inoculated population, but the protection which is afforded against attacks is not absolute. (2) Inoculation diminishes the death-rate among the inoculated population. This is due, not to the fact that the rate of attack is diminished, but also to the fact that the fatality of attacks is diminished. (3) Inoculation does not appear to confer any degree of protection within the first few days after the inoculation has been performed. (4) Inoculation confers a protection which certainly lasts for some considerable number of weeks. It is possible that the protection lasts for a number of months. (5) The varying strength of the vaccine employed has apparently had a great effect upon the results which have been obtained from inoculation. There appears to be a definite quantum of vaccinating material which gives the maximum amount of protection; and provided that this quantum can be injected in one dose, and provided also that the protection turns out to be a lasting one, reinoculation might with advantage be dispensed with. The best results of inoculation will only be obtained after an accurate method of standardisation has been devised. (6) The Commissioners finally recommend that, under the safeguards and conditions of accurate standardisation and complete sterilisation of the vaccine and the thorough sterilisation of the syringe in every case, inoculations should be encouraged wherever possible, and in particular among disinfecting staffs and the attendants of plague hospitals.

WE have received from Mr. H. Geitel an interesting paper read before the Brunswick Society of Science, entitled "Contributions to the Knowledge of Atmospheric Electricity," by Mr. J. Elster and himself. The paper deals principally with a summary of the results of experiments on the ionic conduction of gases, first investigated by W. Giese, in 1882, and subsequently by Prof. A. Schuster, J. J. Thomson, and others, and explains the recent advances made in the problem of atmospheric electricity by treating it from a similar standpoint. The results attained agree well with those arrived at by Mr. C. T. R. Wilson, of the Cavendish Laboratory, at Cambridge, in recent experiments, made at the instance of the Meteorological Council, on the relation between rain and atmospheric electricity (*Phil. Trans.* Ser. A, 193, 1899). He found that positive and negative ions (at least those produced in air by Röntgen rays) differed in their efficiency as condensation nuclei, that the negative ions are more efficient as nuclei for the condensation of water vapour, and that a preponderance of negative electricity will consequently be carried down by precipitation to the earth's surface. Elster and Geitel found that normal atmospheric air contains positive and negative ions in nearly equal quantity, and that when the air is pure the ions meet with little obstruction to their movement, the negative (as shown by Zeleny) moving faster, but that if the air is misty their mass is greatly increased, and their mobility almost entirely prevented.

A MEMOIR on the geology of Newport, Monmouthshire, by Mr. Aubrey Strahan, has just been issued by the Geological Survey. It is notified as the first part of a general memoir on the geology of the South Wales coal-field. The original geological survey of that large area was commenced more than sixty years ago by De la Beche, and it is but natural that the old one-inch maps have long been out-of-date. The re-survey was commenced by Mr. Strahan in 1891, and now, with the aid of several colleagues, a large part of the coal-field has been mapped in detail on the six-inch scale. These larger maps are deposited for reference in the Geological Survey Office in Jermyn Street, while the one-inch maps, which are published, afford a good general idea of the structure of the country. Of these sheet No. 249 is now described. The main advances made are in the sub-division of the Old Red Sandstone and of the Coal-measures, and in the tracing out of the faults and disturbances which have affected the position of the productive coal-strata. The memoir contains the results of a systematic survey, whereby the variations in the character and thickness of the strata have been followed, and the numerous coal-seams have been tabulated and correlated. The practical importance of the work in the colliery districts will be appreciated by those interested in the further development of the great coal-field. On scientific grounds geologists will find matter of interest relating to the Silurian rocks and fossils of the Usk district, as well as in regard to the Old Red Sandstone, Carboniferous Rocks, Keuper Marls, Rhætic Beds and Lower Lias. It is noteworthy that there appears to be a sharp plane of demarcation between the Silurian and Old Red Sandstone; and that no break has locally been found in the series of strata which constitute the Old Red Sandstone. The mapping of the Drift deposits has thrown much new light on the extent of the glaciation of South Wales.

PROF. TACCHINI, in a recent contribution to the *R. Accademia dei Lincei*, describes the Roman earthquake of July 19, 1899. The earthquake belongs to the series which have their origins beneath the Alban Hills, the epicentre being situated near Frascati. At this place, and in some of the neighbouring villages, buildings were damaged. The shock was felt to a distance of 130 km. from the epicentre, and was recorded by the seismometrograph at Catania (520 km.), having travelled there with a velocity of about 4 km. per second. Diagrams of great interest were obtained by means of the seismographs erected in the cellar of the Collegio Romano at Rome.

Much interest attaches to a short note, accompanied by a plate, by Mr. D. le Souëf, in the February number of the *Zoologist*, on the mode in which the newly-born Kangaroo is transferred to the maternal pouch and affixed to the nipple. "When the young one is ready to be born," writes the author, "the mother sits down on the ground, resting on the upper portion of the base of her tail, and with that appendage resting level on the ground in front of her; she then holds her pouch open with her two fore-paws, and, as the helpless mite is born, it rests on the soft fur of the under side of the tail. The mother immediately transfers it to her pouch with her lips only, and evidently with great care attaches it to the nipple. The mouth of the young one is apparently only a round hole, and it as yet has no power of suction; but the nipple is of a peculiar shape, with the point hard, and the mother is thereby enabled to insert it into the mouth of the young one. She then holds it in position while she pours the milk into the nipple, which thereby swells out and holds the young one on; but if, after being once firmly attached, it is pulled off, it cannot be replaced, even by the mother, for the end of the nipple now being flaccid instead of hard cannot well be inserted into the mouth of the little one."

We have received from Messrs. G. H. Carpenter and W. Evans a reprint of their memoir published in the *Proceedings* of the Royal Physical Society of Edinburgh, on the spring-tails (Collembola) and bristle-tails (Thysanura) of the Edinburgh district; a group of insects the study of which has hitherto received somewhat scant attention.

A paper by Prof. H. A. Kelly in the December number of the *Bulletin* of the Johns Hopkins Hospital, entitled "The Recognition of the Poisonous Serpents of North America," merits notice, if only for the sake of the beautiful photographs of snakes' heads with which it is illustrated. In addition to these life-like portraits, the author gives brief descriptions of some of the leading features of the various species.

To the January number of the *American Naturalist* Prof. H. F. Osborn contributes an instructive paper on the intercentra and hypapophyses in the cervical region of the backbone of various groups of reptiles. In the same issue Mr. Aleš Hrdlicka publishes a plan for the best arrangement of large series of human bones intended for comparative study; this may be commended to the careful attention of museum curators.

Last year, in an aviary in one of the wards at Caterham Asylum, a wild rabbit turned a dove off its nest and sat on two doves' eggs till they were hatched. A correspondent of *The Christian Globe* (March 1) states that this year the nurses are trying another hatching operation. They have placed two bantam's eggs in the same nest. The same rabbit has taken to these eggs, and only leaves the eggs to take its food, returning at once to the nest. The nest is six feet from the ground; the rabbit, in the presence of the correspondent, was taken out of the nest and placed on the floor by the nurse, but it very quickly climbed up again to the nest.

The *Transactions* of the English Arboricultural Society, vol. iv. part 2, contains several valuable papers on the pruning and culture of trees, as also some interesting photographs.

We have received a copy of the second edition of "Die Moor- und Alpenpflanzen (vorzugsweise Eiszeitflora) des Alpengartens Zöschen bei Merseburg, und ihre Cultur," compiled by Dr. G. Dieck. The list occupies over 70 pages, and gives a large amount of information respecting the habit and mode of culture of a very great number of Alpine plants. They are offered for sale either singly or in assortments.

Messrs. James Backhouse and Son, Ltd., of York, have inaugurated a new department in their Nurseries, which may be of great service to botanical lecturers and demonstrators, in providing a supply of material especially for microscopic work. They have issued an extensive priced catalogue, comprising objects in the Myxomycetes, Algæ (including diatoms), Characeæ, Fungi, Hepaticæ, Musci, Pteridophyta (prothallia and vegetative organs), Gymnosperms, and all the more important orders of Angiosperms. The department is under the management of an experienced practical botanist, Dr. Arthur H. Burtt, and seems likely to supply a long-felt want.

Dr. Paul Topinard's volume on "Science and Faith" was recently noticed in these columns (p. 270). We have now received the French edition of the work, having for its title "L'Anthropologie et La Science Sociale," and published by MM. Masson and Co. Several sections are considerably larger in the French than in the English edition, and the section on social science is entirely different. The French title better expresses the scope of the work than the English one.

Prof. W. Johannsen, of Copenhagen, has issued, in German, (Fischer, Jena) a pamphlet on the etherisation of plants, for the information of practical nurserymen. He has devised an apparatus for the exposure of growing plants to the action of the vapour of ether, and states that, while killing the leaves already on the plant, it promotes the rapid and luxuriant development of the buds after removal from the ether-box. The experiments were made chiefly on the lilac.

The following lectures will be given at the Royal Victoria Hall, Waterloo Road, S.E., on Tuesday evenings during March:—March 6, Mr. A. Stanfield, "Money"; March 13, Mr. S. A. F. White, "The Polarisation of Light"; March 20, Prof. Frank Clowes, "Nature's Scavengers"; March 27, Mr. Bennett H. Brough, "The World's Copper Mines."

The fourth part of the sixth edition of Sir Michael Foster's standard "Text-Book of Physiology" will be published immediately by Messrs. Macmillan and Co., Ltd. In previous editions this part has included Book III., on the senses and some special muscular mechanisms, and Book IV., on the tissues and mechanisms of reproduction. In the volume about to be issued, only the senses are dealt with; and in the revision of this part Sir Michael Foster has had the valuable assistance of Dr. W. H. R. Rivers, whose name appears upon the title-page. Part v. of this work will consist of the subjects of Book IV. formerly included in Part iv.

The additions to the Zoological Society's Gardens during the past week include a Pinche Monkey (*Midas oedipus*) from Colombia, presented by Mrs. H. V. Holden; a Marica Gazelle (*Gazella marica*, ♀) from the Persian Gulf, presented by Mr. B. T. Ffinch; a Red-crested Cardinal (*Paroaria cucullata*) from South America, presented by Miss Power; a Jackal Buzzard (*Buteo jacal*) from Africa, presented by Mr. Douglas Mann; a Nilotic Crocodile (*Crocodilus niloticus*) from Africa, presented by Mr. Rupert D'Oyly Carte; an Indian Darter (*Plotus melanogaster*), an Indian Hornbill (*Anthracoceros malabaricus*) from India, two Common Wolves (*Canis lupus*, ♂ ♀, white var.), a Four-lined Snake (*Coluber quatuorlineatus*), European; a Serrated Terrapin (*Chrysemys scripta*), two Speckled Terrapins (*Clemmys guttata*), fifteen Mississippi Terrapins (*Malacoclemmys geographica*) from North America, four Black-headed Terrapins (*Damonia reevesi unicolor*) from China, deposited; an Undulated Grass Parrakeet (*Melopsittacus undulatus*) from Australia, received in exchange.